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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/883,899 | 06/18/2001 | Reiko Kondo | 0941.65628 | 2563 |
| 24978 | 7590 | 05/27/2005 | EXAMINER | |
| GREER, BURNS & CRAIN 300 S WACKER DR 25TH FLOOR CHICAGO, IL 60606 | | | KLIMOWICZ, WILLIAM JOSEPH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2652 | |

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,899

Applicant(s)

KONDO ET AL.

Examiner

William J. Klimowicz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 18, 2005 has been entered.

Claim Status

Claims 1, 2 and 4-8 are currently pending.

Claims 3, 9 and 10 has been cancelled by the Applicants.

Claim Objections

Claims 1 and 8 are objected to because of the following informalities:

With regard to claim 1 (line &0 and claim 8 (line 8), the word "magnetoresistive" should be changed to the word --magnetoresistance--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshikawa et al. (JP 6-325331 A) in view of Lee et al (US 6,223,420 A1) .

As per claims 1 and 8, Koshikawa et al. (JP 6-325331 A) discloses a conventional magnetic head used in a magnetic reproducing device, including a magnetoresistance film (e.g., 22); a flux guide (e.g., 24) guiding a signal magnetic field from a magnetic recording medium through said magnetoresistance film (22), wherein said signal magnetic field in said flux guide (24) is in the same general direction (e.g., upward from the medium through guide (24) and from guide (24) through to the magnetoresistance element (22)) as said signal magnetic field of said magnetoresistance film (22), wherein a part (e.g., portion of (24) that overlaps the lower end portion of (22) - see FIGS. 1-10 in particular) of a surface of the magnetoresistance film (22) overlaps a part of a surface of the flux guide (24), and wherein the surface of the magnetoresistance film (22) is not an edge of the magnetoresistance film (22) and the surface of the flux guide (24) is not an edge of the flux guide (24).

Additionally, as per claim 2, wherein said flux guide (24) is formed as a separate element from said magnetoresistance film (11).

As per claims 1 and 8, however, Koshikawa et al. (JP 6-325331 A) does not expressly disclose a flux-guide regulating film aligning magnetic domains of said flux guide into a single magnetic domain.

Lee et al (US 6,223,420 A1), however, discloses a magnetic head and a magnetic reproducing device (e.g., FIGS. 9 and 10 in conjunction with COL. 7, lines 58 *et seq.* and/or

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alternatively, the embodiment, e.g. including FIG. 13) comprising: a magnetoresistance film (e.g., 218); a flux guide (208) formed so as to overlap said magnetoresistance film (202) (e.g., due to at least a taper overlapping at (220)), said flux guide (208) being out of plane with said magnetoresistance film (1) - see FIG. 10, the flux guide (208) guiding a signal magnetic field from a magnetic recording medium (at (218) to said magnetoresistance film (202), see COL. 7, lines 58 *et seq.*; and a flux-guide regulating film (204/206) aligning magnetic domains of said flux guide (208) into a single magnetic domain (e.g. see *inter alia*, COL. 7, line 66 through COL. 8, line 13).

Additionally, as per claim 2, wherein said flux guide (208) is formed as a separate element from said magnetoresistance film (202) -FIG. 10.

As per claim 4, wherein at least one of sides and surfaces of said flux-guide regulating film (204/206) is magnetically connected with said flux guide (208) - FIG. 9.

As per claim 5, said flux-guide regulating film (24/25) is one of a highly coercive-force film and an antiferromagnetic film (e.g. see *inter alia*, COL. 7, line 67 through COL. 8, line 2).

As per claim 6, wherein said flux-guide regulating film (204/206) also aligns magnetic domains of said magnetoresistance film (202) into a single magnetic domain (e.g., see *inter alia*, COL. 7, line 66 through COL. 8, line 13).

As per claim 7, wherein said magnetoresistance film (202) is a magnetoresistance film of one of a spin-valve type and a tunnel junction type (e.g. see, *inter alia*, COL. 5, lines 65-67).

Additionally, as per claim 8, Lee et al (US 6,223,420 B1) discloses a magnetic reproducing device (e.g., FIGS. 1 and 2) comprising: a magnetic head (e.g. 42) including the aforementioned magnetoresistance film (202) and flux guide (208).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the flux-guide regulating film, as expressly taught by Lee et al (US 6,223,420 A1), to the magnetic head flux-guide MR system of Koshikawa et al. (JP 6-325331 A).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the flux-guide regulating film, as expressly taught by Lee et al (US 6,223,420 A1), to the magnetic head flux-guide MR system of Koshikawa et al. (JP 6-325331 A) in order for “stabilizing end regions of each of the read sensor and the one or more flux guides ... so that upon the instance of flux incursions of the absence thereof from a rotating disk the end regions remain in the single domain state as contrasted to shifting domains which cause Barkhausen noise.” See COL. 8, line 1 through line 10 of Lee et al (US 6,223,420 A1).

Response to Arguments

Applicants' arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William J. Klimowicz
Primary Examiner
Art Unit 2652

WJK